What is claimed is:

1. An antenna duplexer comprising:

i) a transmitter surface acoustic wave (SAW) filter;

ii) a phase shift circuit whose one port is electrically connected with an output port of the transmitter SAW filter; and

iii) a receiver SAW filter whose input port is electrically connected with remaining one port of the phase shift circuit,

wherein the transmitter and receiver SAW filters have different frequency bands, providing attenuation with each other,

the phase shift circuit i) shifts a phase of the receiver SAW filter in its transmitter-band; and ii) has a phase angle and a characteristic impedance with which a magnitude of a reflection coefficient at a center frequency in the transmitter-band of receiver SAW filter is to be not less than 0.8 and the phase angle of reflection coefficient at a center frequency in the transmitter-band of receiver SAW filter is to be from 0° to 45°.

2. The antenna duplexer of claim 1, wherein the phase shift circuit has a less-than-50 ohm characteristic impedance.

3. The antenna duplexer of claim 2, wherein the characteristic impedance of the phase shift circuit takes 42 ± 8 ohms excluding 50 ohms.

4. The antenna duplexer of claim 1, wherein the transmitter SAW filter is a ladder-type filter, in which a resonance frequency of a serial-branch SAW resonator is higher than an anti-resonance frequency of a parallel-branch SAW resonator.

5. The antenna duplexer of claim 1, wherein the phase angle of the phase shift circuit takes 90 ± 10°.

6. The antenna duplexer of claim 1, wherein the characteristic impedance of the phase shift circuit takes 42 ± 8 ohms excluding 50 ohms, and the phase angle of the phase shift circuit takes 90 ± 10°.

7. An antenna duplexer comprising:

a transmitter surface acoustic wave (SAW) filter;

a phase shift circuit whose one port is electrically connected with an output port of the transmitter SAW filter; and

a receiver SAW filter whose input port is electrically connected with remaining one port of the phase shift circuit,

wherein the transmitter and receiver SAW filters have different pass bands and attenuate the other pass band with each other.,

the phase shift circuit i) shifts a phase of the receiver SAW filter in its transmitter-band; and ii) has a less-than-50 ohm characteristic impedance.

8. The antenna duplexer of claim 7, wherein the characteristic impedance of the phase shift circuit takes 42 ± 8 ohms excluding 50 ohms.